

2. The momentum control device of claim 1 wherein the spinning bodies are control moment gyros and the control system is contained within the unitary combination.

3. The momentum control device of claim 1 wherein the struts are arranged as a hexapod.

4. The momentum control device of claim 1 wherein the struts are arranged as an octopod.

5. A method of mounting a plurality of spinable bodies to a spacecraft for imparting a desired torque to change the attitude of the spacecraft, comprising:

fastening a first of the plurality of bodies to a unitary mounting structure so as to allow the first body to spin about a first axis;

fastening a second of the plurality of bodies to the unitary mounting structure so as to allow the second body to spin about a second axis non-collinear with the first axis;

fastening a third of the plurality of bodies to the unitary structure so as to allow the third body to spin about a third axis non-collinear with the first or second axis;

fastening a plurality of struts having a predetermined static stiffness and passive damping between the unitary structure and the spacecraft so that forces are produced in the struts by the plurality of bodies to provide the desired torque and reducing transmission of unwanted frequency vibrations generated by the bodies to the spacecraft;

creating force signals representative of the forces applied through the struts to the spacecraft; and,

installing a control system within the unitary structure to receive the force signals and control the operation of

the bodies to produce said torque as a function of the force signals to change the attitude of the spacecraft.

6. A momentum control device for positioning a craft comprising:

a plurality of bodies each operable to spin about separate axes and to produce a torque,

a unitary structure;

mounting members connected to each spinning body and to the unitary structure so as to provide a unitary combination for receiving the torques from the plurality of bodies;

a plurality of struts for connecting the unitary structure to the spacecraft to transmit the torques to the spacecraft, each strut comprising a force sensor to generate force information on the force transmitted to the spacecraft from the unitary structure through the strut; and

a control system to receive the force information from the force sensors to control the operation of the bodies to change the attitude of the spacecraft as a function of the forces.

7. The momentum control device described in claim 6, wherein the control system is located within the unitary structure.

8. The momentum control device described in claim 6, wherein the struts contain damping means for attenuating the transmission of noise from the spinning bodies through the unitary structure to the spacecraft.

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